

Title (en)

NEGATIVE ELECTRODE MATERIAL FOR NONAQUEOUS SECONDARY BATTERY

Title (de)

NEGATIVELEKTRODENMATERIAL FÜR EINE NICHTWÄSSRIGE SEKUNDÄRBATTERIE

Title (fr)

MATÉRIAU D'ÉLECTRODE NÉGATIVE POUR BATTERIE SECONDAIRE NON AQUEUSE

Publication

**EP 2352192 A4 20140115 (EN)**

Application

**EP 09823705 A 20091030**

Priority

- JP 2009068705 W 20091030
- JP 2008282025 A 20081031

Abstract (en)

[origin: EP2352192A1] To provide a carbon material capable of suppressing excessive reactivity with an electrolytic solution and excellent in a rapid charge/discharge characteristics. A carbon material for lithium ion secondary batteries, which satisfies: (i) a tap density  $\rho_t$  0.75 g/cm<sup>3</sup>; (ii) a Raman R value  $R$  0.23 and a half width of D band  $\Delta\nu_D$  < 45 cm<sup>-1</sup>, in which the D band appears in the vicinity of 1,358 cm<sup>-1</sup> of the Raman spectrum; and (iii) 4 m<sup>2</sup>/g  $\leq$  BET specific surface area (SA)  $\leq$  11 m<sup>2</sup>/g.

IPC 8 full level

**H01M 4/58** (2010.01); **B82Y 30/00** (2011.01); **B82Y 40/00** (2011.01); **C01B 31/02** (2006.01); **C01B 31/04** (2006.01); **H01M 4/133** (2010.01); **H01M 4/36** (2006.01); **H01M 4/583** (2010.01); **H01M 4/587** (2010.01); **H01M 10/052** (2010.01); **H01M 10/0525** (2010.01); **H01M 10/0569** (2010.01)

CPC (source: EP KR US)

**B82Y 30/00** (2013.01 - EP US); **B82Y 40/00** (2013.01 - EP US); **C01B 32/05** (2017.07 - EP US); **C01B 32/20** (2017.07 - EP US); **C01B 32/21** (2017.07 - EP KR US); **H01M 4/583** (2013.01 - EP US); **H01M 4/587** (2013.01 - KR); **H01M 10/0525** (2013.01 - EP KR US); **C01B 32/05** (2017.07 - KR); **C01P 2002/82** (2013.01 - KR); **C01P 2004/80** (2013.01 - KR); **C01P 2006/12** (2013.01 - KR); **C01P 2006/40** (2013.01 - KR); **H01M 4/133** (2013.01 - KR); **H01M 4/364** (2013.01 - KR); **H01M 10/0569** (2013.01 - KR); **H01M 2004/021** (2013.01 - KR); **H01M 2004/027** (2013.01 - KR); **H01M 2300/0028** (2013.01 - KR); **Y02E 60/10** (2013.01 - EP)

Citation (search report)

- [A] EP 1939971 A1 20080702 - MITSUBISHI CHEM CORP [JP]
- [A] EP 0549802 A1 19930707 - MITSUBISHI PETROCHEMICAL CO [JP]
- See references of WO 2010050595A1

Cited by

TW1631756B

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)

**EP 2352192 A1 20110803**; **EP 2352192 A4 20140115**; **EP 2352192 B1 20160601**; CN 102203989 A 20110928; CN 102203989 B 20140514; JP 2010135314 A 20100617; JP 5440099 B2 20140312; KR 101609406 B1 20160405; KR 20110084883 A 20110726; US 2011262802 A1 201111027; US 8697285 B2 20140415; WO 2010050595 A1 20100506

DOCDB simple family (application)

**EP 09823705 A 20091030**; CN 200980143281 A 20091030; JP 2009068705 W 20091030; JP 2009251098 A 20091030; KR 20117009453 A 20091030; US 200913126968 A 20091030